(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 July 2001 (19.07.2001)

PCT

(10) International Publication Number
WO 01/50909 A1

(51) International Patent Classification[7]: A45C 13/30

(21) International Application Number: PCT/KR00/00122

(22) International Filing Date: 16 February 2000 (16.02.2000)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
2000/1911 15 January 2000 (15.01.2000) KR

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(81) Designated States *(national)*: CN, JP, KR, US.

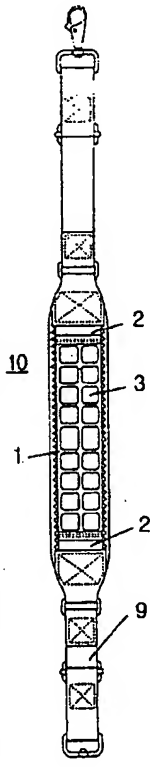
(84) Designated States *(regional)*: European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SHOCK ABSORBER FOR SHOULDER STRAP

(57) Abstract: A shock absorber for a shoulder strap is provided. The shock absorber includes a panel-like absorbing portion having a plurality of protrusions filled with air and hermetically sealed, and a reinforcement portion sewed together with the absorbing portion and connected to the middle of the shoulder strap having a predetermined width. Accordingly, the weight of the load due to the bag or carried item is alleviated, thereby softening the pain on the shoulder. Therefore, while carrying the bag or item, the user may not be fatigued and feels comfortable.



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SHOCK ABSORBER FOR SHOULDER STRAP

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an incorporated or detachably attached shock absorber for a shoulder strap of a bag or item, adapted to alleviate the pain applied on the shoulder or reduce the load applied across the body when one moves with a bag or item carried on one's shoulder. In particular, the present invention relates to a shock absorber for a shoulder strap, which can comfort a user when the user carries a heavy item, by providing a plurality of protrusions filled with air and a reinforcement portion made of resilient material having extensibility, thereby alleviating the pain on the shoulder and reducing the load such that the load of the bag or carried item applied on the shoulder is absorbed in the middle of the protrusions and the reinforcement portion by the action/reaction therebetween.

2. Description of the Related Art

In general, known shoulder straps have been made of webbing or bag materials. Alternatively, the known shoulder straps have been made by inserting conventional shoulder pad or foam made of polyvinyl chloride (PVC) into webbing or bag materials. sewing and adhering the same by a known method.

However, since such shoulder straps lack elongation and have no means for absorbing shock due to the load, the load stress applied in the case when one carries

heavy loads on one's shoulder for a long time is directly transmitted to one's shoulder. Thus, one may feel painful and may be extremely fatigued.

In conclusion, since conventional shoulder straps, which lack elongation and have no means for absorbing load shock, the user must bear severe pain on the shoulder due to the weight of the heavy load and extreme fatigue caused thereby.

SUMMARY OF THE INVENTION

To solve the above-described problems, the present invention provides a plurality of protrusions filled with air, creating an absorbing portion formed of air layers, thereby absorbing the shock on one's shoulder, and a reinforcement portion made of a resilient material having extensibility, thereby reducing the load across one's body by action/reaction of the reinforcement portion while carrying a bag or item. Therefore, it is an object of the present invention to provide a shock absorber for a shoulder strap, which can noticeably reduce the load stress actually applied when a user carries a heavy bag or item on the shoulder and can comfort the user by alleviating the pain on the shoulder and consequent fatigue.

To accomplish the above object of the present invention, there is provided a shock absorber for a shoulder strap including a panel-like absorbing portion having a plurality of protrusions filled with air and hermetically sealed, and a reinforcement portion sewed together with the absorbing portion and connected to the middle of the shoulder strap having a predetermined width.

According to another aspect of the present invention, there is provided a shock absorber for a shoulder strap including a panel-like absorbing portion having a

plurality of protrusions filled with air and hermetically sealed, and a connecting portion sewed together with the absorbing portion and capable of detachably wrapping a predetermined portion of the shoulder strap.

In this embodiment, the reinforcement portion made of a resilient material having extensibility may be separately connected to an arbitrary position of the shoulder strap having a predetermined width.

The feature of the shock absorber for a shoulder strap according to the present invention lies in that it can be employed to both a carried item itself and a bag containing the item such as a bag adapted to be supported by one-side shoulder of a user, or a sack, enabling every item to be carried on one's shoulder with ease and comfort.

Further, according to the shock absorber for a shoulder strap of the present invention, the outer surface of the absorbing portion may be coated with leather, or a printing portion may be provided inside the absorbing portion without being coated.

In addition, according to the present invention, high-quality products can be attained by forming rubber dots or bio-ceramic dots on the plurality of protrusions formed in the absorbing portion for the purpose of preventing slippage or facilitating blood circulation of the user.

BRIEF DESCRIPTION OF THE DRAWINGS

The above object and advantages of the present invention will become more apparent by describing in detail a preferred embodiment thereof with reference to the attached drawings in which:

FIGS. 1 and 2 are perspective views schematically illustrating bags each having a shock absorber for a shoulder strap according to the present invention;

FIG. 3 is a plan view of a shock absorber for a shoulder strap according an embodiment of the present invention;

FIG. 4 is a rear view of the shock absorber for a shoulder strap shown in FIG. 3;

FIG. 5 is a side view of the shock absorber for a shoulder strap shown in FIG. 3;

FIG. 6 is an enlarged cross-sectional view of a portion "A" shown in FIG. 5;

FIG. 7 is a plan view of a shock absorber for a shoulder strap according to another embodiment of the present invention; and

FIG. 8 is a rear view of the shock absorber for a shoulder strap shown in FIG. 7.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Preferred embodiment of the present invention will now be described in detail with reference to the accompanying drawings.

As shown in FIGS. 1 and 2 schematically illustrating bags each having a shock absorber for a shoulder strap according to the present invention, a shock absorber 10 according to this embodiment can be employed to a shoulder strap 9 of a bag to be carried on one-side shoulder of a user or a sack, for example. If it is possible to attach a shoulder strap to a carried item itself, the shoulder strap 9 can be

employed directly to the carried item. Thus, every item carried on the shoulder of the user can be carried with ease and comfort.

The shock absorber 10 for a shoulder strap according to the present invention will now be described in more detail with reference to FIGS. 3 through 6. FIG. 3 is a plan view of a shock absorber for a shoulder strap according an embodiment of the present invention, FIG. 4 is a rear view of the shock absorber for a shoulder strap shown in FIG. 3, and FIG. 5 is a side view of the shock absorber for a shoulder strap shown in FIG. 3. As shown in the drawings, the shock absorber 10 includes a panel-like absorbing portion 1 having a plurality of protrusions 3 filled with air and hermetically sealed, and a reinforcement portion 2 formed of an resilient material having extensibility, sewed with the absorbing portion 1 and connected to the middle of the shoulder strap 9 having a predetermined width.

The absorbing portion 1 includes the plurality of protrusions 3 arranged in a matrix pattern, as shown in FIG. 3, and the shape and pattern of the matrix of the protrusions are not limited thereto. The protrusions 3 are formed by compression-molding thermal polyurethane (TPU) resin that is highly resilient and transparent. Also, since the internal portions of the protrusions 3 are filled with air to serve as an air cushion, the absorbing portion 1 can maximize the effect of absorbing the shock applied in a user's shoulder direction due to the load of the carried item.

Preferably, the absorbing portion 1 is coated with leather on its external surface for enhancing the outer appearance. Alternatively, a printing portion (not shown) may be provided inside the absorbing portion 1 without being coated to then

be compression-molded for the purpose of indicating a pertinent trademark or decorating advertisement copies.

FIG. 6 is an enlarged cross-sectional view of a portion "A" shown in FIG. 5. As shown in FIG. 6, the reinforcement portion 2 made of resilient materials having extensibility, consisting of spandex or neoprene 4 and a rubber band 5, is provided in the lower portion of the shock absorber 10 according to the present invention. As shown in FIGS. 3 and 4, the reinforcement portion 2 is sewed lengthwise along its both sides together with the absorbing portion 1 to be connected to the middle of the shoulder strap 9. Thus, the weight of the load of the bag or item can be reduced by the resilience of the reinforcement 2 while moving with the bag or item carried on one's shoulder.

In order to connect to the bag the shoulder strap 9 having the shock absorber 10 according to the present invention, the shoulder strap 9 is connected to the bag in a direction in which the absorbing portion 1 is brought into contact with one's shoulder, as shown in FIGS. 1 and 2. In such a manner, the plurality of protrusions 3, which are filled with air, function as an air cushion against TPU resin, thereby absorbing the load applied on the shoulder. Also, the shock caused while carrying the bag or item is absorbed by the resilience of the reinforcement portion 2 made of a resilient material, thereby alleviating the weight of the load and softening the pain on the shoulder. Therefore, the user can be free of fatigue and feel comfortable when carrying the bag or item on the shoulder. Further, a finger-pressure treatment effect can be attained by the plurality of protrusions 3, thereby facilitating blood circulation of the user.

FIG. 7 is a plan view of a shock absorber for a shoulder strap according to another embodiment of the present invention, and FIG. 8 is a rear view of the shock absorber for a shoulder strap shown in FIG. 7. Referring to FIGS. 7 and 8, a shock absorber 20 according to this embodiment includes a panel-like absorbing portion 11 having a plurality of protrusions 13 filled with air and hermetically sealed, and a connecting portion 12 formed of an adhesive cloth, for example, Velcro, sewed together with the absorbing portion 11 and capable of detachably wrapping a predetermined portion of the shoulder strap 9.

The absorbing portion 11 is the same as the absorbing portion 1, which has been described, in the above embodiment in view of functions and effects, and a detailed explanation thereof will not be made. According to this embodiment, an extendable reinforcement portion may not be provided. However, in a preferred embodiment, the reinforcement portion may be separately connected to the shoulder strap having a predetermined width at its arbitrary position.

Therefore, the shock absorber 20 can be attached to a conventional shoulder strap connected to the bag or carried item itself. The absorbing portion 11 is positioned in a direction in which the absorbing portion 11 is brought into contact with one's shoulder, and then a shoulder strap(not shown) is wrapped by the connecting portion 12 and the absorbing portion 11. Next, the adhesive cloth pieces made of Velcro of the connecting portion 12 are adhered to each other for attachment to an arbitrary portion of the shoulder strap.

In such a manner, the plurality of protrusions 3, which are filled with air, function as an air cushion against TPU resin, which is highly resilient, thereby

absorbing the load applied on the shoulder. Accordingly, the weight of the load due to the bag or carried item itself is alleviated, thereby softening the pain on the shoulder.

What is claimed is:

1. A shock absorber for a shoulder strap comprising:

a panel-like absorbing portion having a plurality of protrusions filled with air and hermetically sealed; and

a reinforcement portion sewed together with the absorbing portion and connected to the middle of the shoulder strap having a predetermined width.

2. The shock absorber according to claim 1, wherein the plurality of protrusions of the absorbing portion are formed by compression-molding thermal polyurethane resin and are arranged in a matrix pattern.

3. The shock absorber according to claim 1, wherein the external surface of the absorbing portion is coated with leather or a printing portion is provided inside the same without being coated.

4. The shock absorber according to claim 1, wherein the reinforcement portion is made of resilient material consisting of spandex or neoprene and a rubber band.

5. A shock absorber for a shoulder strap comprising:

a panel-like absorbing portion having a plurality of protrusions filled with air and hermetically sealed; and

a connecting portion sewed together with the absorbing portion and capable of detachably wrapping a predetermined portion of the shoulder strap.

6. The shock absorber according to claim 5, wherein the plurality of protrusions of the absorbing portion are formed by compression-molding thermal polyurethane resin and are arranged in a matrix pattern.

7. The shock absorber according to claim 5, wherein the external surface of the absorbing portion is coated with leather or a printing portion is provided inside the same without being coated.

8. The shock absorber according to claim 5, wherein the connecting portion is made of an adhesive cloth of Velcro.

9. A bag having a shock absorber for a shoulder strap recited in any one of claims 1 through 8.

FIG. 1

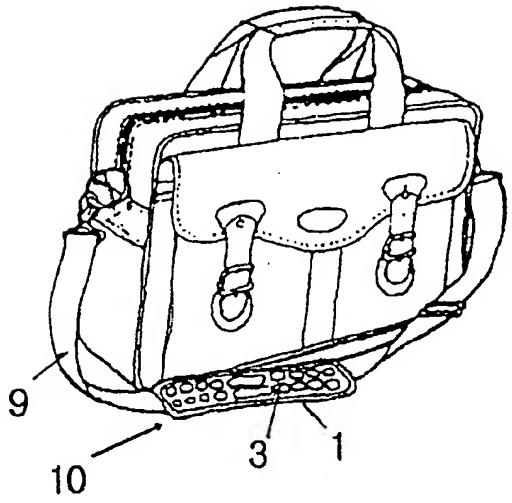


FIG. 2

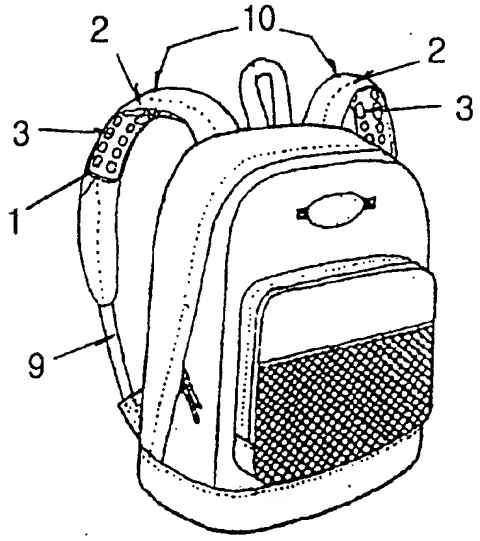


FIG. 3

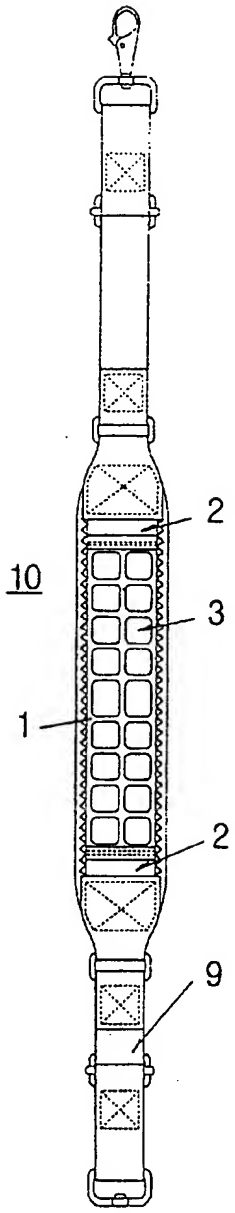


FIG. 4

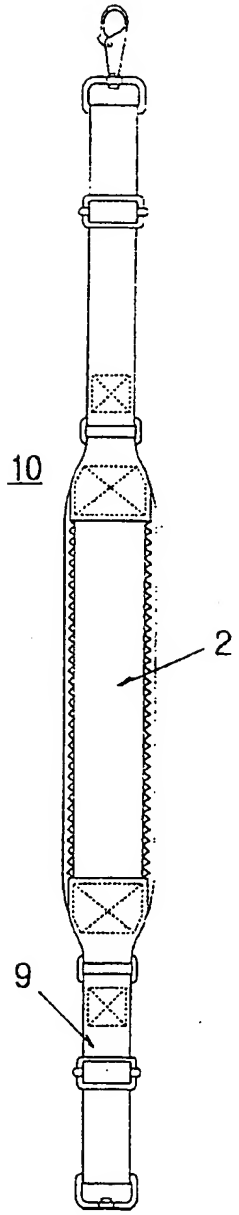


FIG. 5

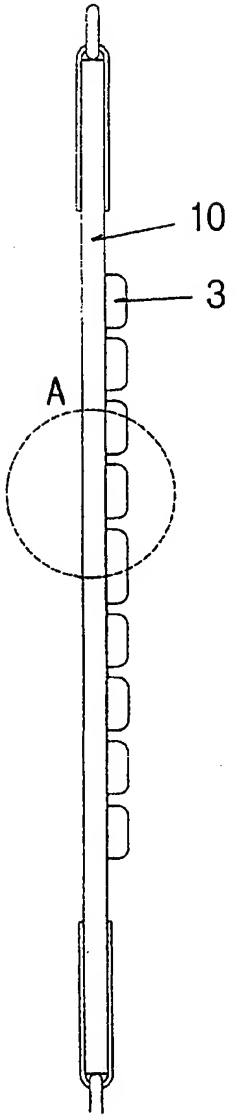


FIG. 6

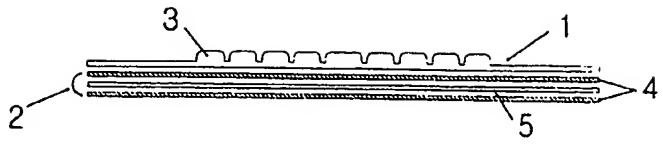


FIG. 7

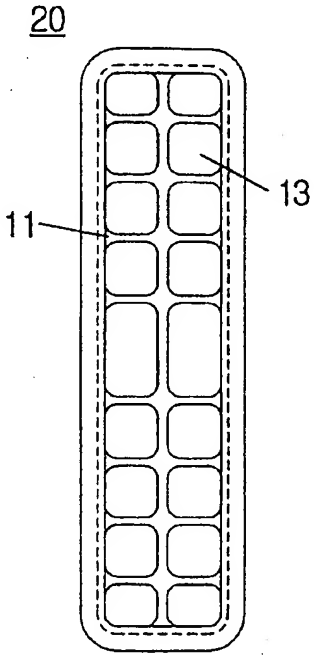
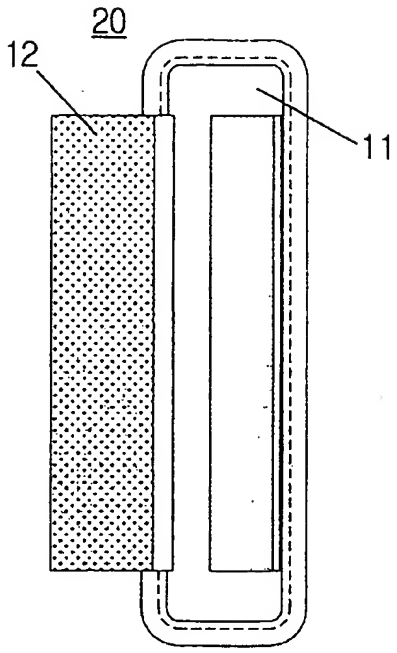


FIG. 8



INTERNATIONAL SEARCH REPORT

international application No.
PCT/KR00/00122

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A45C 13/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimun documentation searched (classification system followed by classification symbols)

IPC7 A45C13/30, B60R22/00, F16F9/30

Documentation searched other than minimun documentation to the extent that such documents are included in the fileds searched

KR IPC as above
JP IPC as above

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search trerms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP, A, 501623 (BRITAX ROEMER KINDERSICHERHEIT) 5 February 1992 (05. 02. 92) see Fig. 2, 3, 4.	1- 8.
A	US, A, 4506868 (SUMITOMO METAL INDUSTRIES, LTD.) 26 March 1985 (26. 03. 85) see Fig. 1, 2, 3.	1 - 8.(Family none)
A	US, A, 4125904 (SHERLEY LEVINE) 21 November 1978 (21. 11. 78) see Fig. 1, 2.	1 - 8.(Family none)

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevence
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Date of the actual completion of the international search	Date of mailing of the international search report
07 OCTOBER 2000 (07.10.2000)	10 OCTOBER 2000 (10.10.2000)

Name and mailing address of the ISA/KR	Authorized officer
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Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-5621

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR00/00122

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP A 0501623	05. 02. 92.	US A 5294183	15. 03. 94.
		GB A 9103841	10. 04. 91.
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